

**AULACUS JURINE (HYMENOPTERA: AULACIDAE) FROM CHINA WITH A  
NEW SPECIES PARASITIZING XIPHYDRIA POPOVI  
(HYMENOPTERA: XIPHYDRIIDAE)**

SHU-PING SUN AND MAO-LING SHENG

General Station of Forest Pest Management, State Forestry Administration,  
Shenyang, Liaoning, 110034, China (e-mail: shengmaoling@163.com)

*Abstract.*—*Aulacus salicius*, n. sp., reared from *Xiphydria popovi* Semenov-Tian-Shanskij and Gussakovskij in Heilongjiang Province, China, and *A. striatus* Jurine, 1807, a new record for China, are reported. A key is provided for the six Palaearctic species and one Oriental Chinese species of *Aulacus*.

*Key Words:* Hymenoptera, Aulacidae, *Aulacus*, new species, China, Xiphydriidae

Sixty-two world species of *Aulacus* Jurine, 1807, have been described (Smith 2001, 2005a, b; He et al. 2002; Jennings et al. 2004a, b, c; Turrisi 2005). Two species, *A. erythrogaster* He and Chen 2002, described from the Oriental part of China and *A. schoenitzeri* Turrisi 2005, described from the Palaearctic part of China, are known in China. In this study, one new species reared from *Xiphydria popovi* Semenov-Tian-Shanskij and Gussakovskij (Xiphydriidae), a woodborer of *Salix* sp. and *Betula* sp., is described, and one species is newly recorded for China.

Identification of *A. striatus* Jurine, 1807, is based on determined specimens lent by Dr. J. Hilszczanski. Information on *A. schoenitzeri* Turrisi 2005, *A. japonicus* Konishi 1990, *A. flavigenis* Alekseev 1986, and *A. jeoffreyi* Alekseev 1993, mentioned in the following key are based on the original descriptions. Identification of *Xiphydria popovi* is based on determined specimens preserved in the Insect Museum, General Station of Forest Pest Management, State Forestry Administration. All specimens examined,

including those of the host, are deposited in the Insect Museum, General Station of Forest Pest Management, State Forestry Administration, Shenyang, China.

KEY TO SPECIES OF *AULACUS* OF CHINA AND  
THE PALAEARCTIC REGION

1. Tergites of metasoma black. . . . . 2  
– Tergites of metasoma, at least 2<sup>nd</sup> and 3<sup>rd</sup>, brown or reddish brown. . . . . 3
2. Ovipositor 0.9× as long as forewing length. Antenna extensively reddish orange with segments 1–4 and 11–14 dark orange (China: Shaanxi) . . . *A. schoenitzeri* Turrisi  
– Ovipositor 0.4× as long as forewing length. Antenna blackish brown (Japan: Houshu) . . . . . *A. japonicus* Konishi
3. Postocellar line 1.4× as long as ocular-ocellar line. Ovipositor about as long as forewing length. Frons yellow (Russia: Primorski Krai) . . . . *A. flavigenis* Alekseev  
– Postocellar line shorter than or subequal to ocular-ocellar line. Ovipositor at most 0.8× as long as forewing length. Frons black or partly black, if reddish brown, postocellar line 0.45× as long as ocular-ocellar line. . . 4
4. Head entirely black. Metasoma entirely dark brown (Russia: Sakhalin) . . . . .  
. . . . . *A. jeoffreyi* Alekseev  
– Head with reddish brown portions. Only apical portion of metasoma black. . . . . 5

- 5. Head mainly black with malar area and gena brown. Stigma  $3.6\times-3.8\times$  as long as its width (Europe and northern Asia to far eastern Russia; China: Inner Mongolia) . . . . . *A. striatus* Jurine
- Head mainly reddish brown. Upper portion of frons and median portion of vertex black. Stigma at most  $3.3\times$  longer than its width . . . . . 6
- 6. Forecoxa black. Postocellar line  $0.45\times$  as long as ocular-ocellar line. Third flagellomere  $4.5\times$  longer than its width (China: Zhejiang) . . . . . *A. erythrogaster* He and Chen
- Forecoxa brown. Postocellar line  $0.6\times-0.7\times$  as long as ocular-ocellar line. Third flagellomere  $6\times$  longer than its width (China: Heilongjiang) . . . . . *A. salicius*, n. sp.

***Aulacus salicius* Sun and Sheng, new species**  
(Figs. 1–4)

Diagnosis.—Head and basal portion of metasoma mainly reddish brown. Mesosoma mainly black. Forecoxa brown. Malar space  $0.7\times-0.8\times$  basal width of mandible. Postocellar line  $0.6\times-0.7\times$  as long as ocular-ocellar line. Length of 3<sup>rd</sup> flagellomere  $6\times$  longer than its width. Stigma  $3.2\times-3.3\times$  longer than its width. Ovipositor sheath length  $0.7\times-0.8\times$  forewing length.

Female.—Body length, 7.0–11.5 mm. Forewing length, 8.5–11.0 mm. Ovipositor sheath length, 6.5–8.0 mm. *Color*: Antenna black with scape and apex of pedicel reddish brown. Head reddish brown with teeth of mandible, upper portion of frons and median portion of vertex black. Mesosoma black, with anterior portion of propleuron and anterolateral of pronotum brown. Wing brownish hyaline. Fore- and midlegs except mid-coxa, apices of hind femur and tibia, and hind tarsus brown to yellowish brown. Basal half of metasoma reddish brown except base and apical half black. Stigma brownish black. Veins brownish black with basal portions brownish.

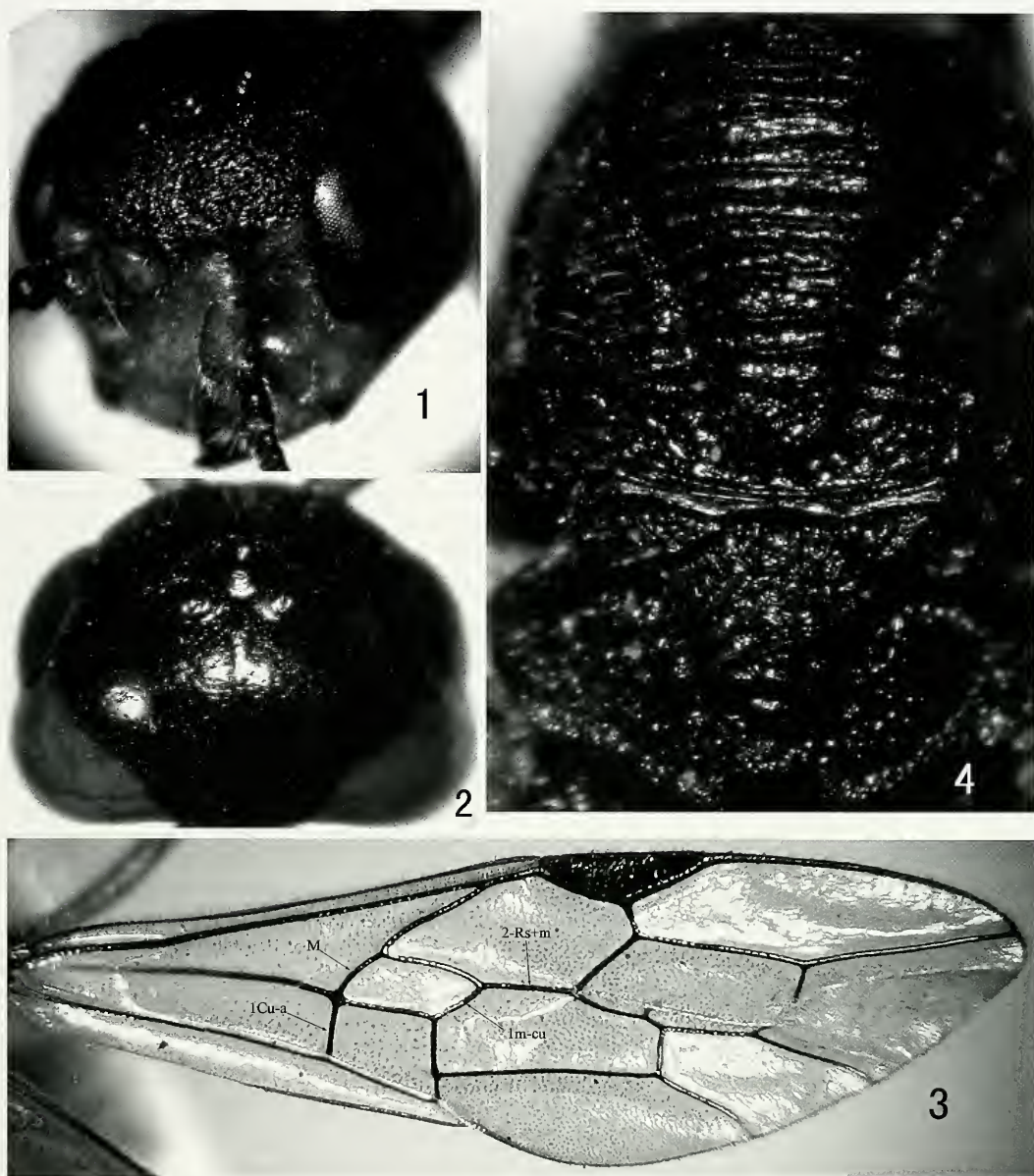
*Head*: Lower portion of frons with very sparse and indistinct punctures, upper portion (Fig. 1) weakly sculptured, with

more or less distinct oblique transverse rugae. Clypeus flat,  $0.5\times-0.6\times$  as long as wide, front margin with a projecting median tooth. Malar space  $0.7\times-0.8\times$  as basal width of mandible, about  $0.4\times$  as eye height. Gena smooth, about as long as eye in dorsal view; median portion swollen longitudinally, with very fine, sparse and indistinct punctures. Vertex (Fig. 2) almost smooth, with very sparse and fine punctures. Postocellar line  $0.6\times-0.7\times$  as long as ocular-ocellar line. Ratio of lengths of first 3 flagellomeres as 25:52:53. Third flagellomere  $6\times$  longer than its width.

*Mesosoma*: Notauli reaching transscutal articulation (Fig. 4), not meeting each other behind. Mesoscutum with prominent transverse rugae. Scutellum and Axilla with oblique transverse rugae. Lateral front portion of pronotum with fine and indistinct punctures, diameter of punctures subequal to distance between punctures, median lower portion with prominent transverse rugae, hind portion with weak oblique rugae. Mesopleuron and metapleuron irregularly reticulate, former with oblique rugae. Basal and lateral portion of propodeum with longitudinal rugae, apical portion with transverse rugae. Forewing (Fig. 3) vein 1Cu-a opposite or slightly distad of M; 2-Rs+m  $1.3\times-1.4\times$  longer than 1m-cu. Stigma  $3.2\times-3.3\times$  longer than its width. Hind wing veins unpigmental, Cu opposite r-m. Outsides of mid- and hind coxae with fine transverse rugae. Hind coxa with elongate ventral lobe, inner side with a median longitudinal ovipositor guide.

*Metasoma*: About  $1.1\times$  longer than mesosoma, smooth. Subbasal portion of first tergite with longitudinal wrinkles. Ovipositor sheath  $0.7-0.8\times$  as long as forewing length.

*Holotype*.—Female, China: Chaihe ( $44^{\circ}51'N$ ,  $129^{\circ}26'E$ ), 514 m, Heilongjiang Province, June 21, 2004, Mao-Ling Sheng.



Figs. 1-4. *Aulacus salicius*. 1, Frons. 2, Vertex. 3, Forewing. 4, Mesosoma, dorsal view.

Paratypes.—6 ♀, same data as for holotype.

Host.—Reared from wood of *Salix* sp. from which many *Xiphydria popovi* emerged.

Etymology.—The name of the new species is based on the food plant of its host.

Discussion.—*Aulacus salicius* is similar to *A. striatus* and *A. erythrogaster*. *Aulacus salicius* can be distinguished from *A. striatus* by the very sparse and fine punctures on the vertex (Fig. 2), mostly black antennae, and mostly reddish-brown head. *Aulacus striatus* has coarse and dense punctures on the

vertex, blackish-brown antennae, and the head extensively black. *Aulacus salicius* can be distinguished from *A. erythrogastrer* by characters in couplet 6 of the preceding key.

*Aulacus striatus* Jurine, 1807

Specimen examined.—1 ♀, labeled “China: Alihe, Inner Mongolia, August 14, 1981, Nankai University.” New record for China.

ACKNOWLEDGMENTS

We are deeply grateful to Dr. D. Smith, Systematic Entomology Laboratory, USDA, National Museum of Natural History, Smithsonian Institution, Washington, U.S.A., for his kindness in reviewing manuscript. We also thank Dr. J. Hilszczanski, Department of Forest Protection, Forest Research Institute, Warsaw, Poland, for lending specimens. Financial support from the National Natural Science Foundation of China (NSFC, No. 30471397) is thankfully acknowledged.

LITERATURE CITED

- Alekseev, V. N. 1986. Aulacidae (Hymenoptera Evanioidea) of Eastern Siberia and the Soviet Far East. pp. 15–18. *In* Ler, P. A., Belokobylskii, S. A., and Storozheva, N. A., eds. [Hymenoptera of Eastern Siberia and the Far East. Collected works], Academy of Sciences USSR, Far East Science Centre, Vladivostok, 1986: pp. 1–152.
- . 1993. *Gasteruption daisyi* sp. n. and *Aulacus jeffreyi* sp. n. (Hymenoptera, Evanioidea) new species of evanioide parasitic wasps from Middle Asia and Russian Far East. *Zoologicheskii Zhurnal* 72: 152–154.
- He, J., X. Chen, and Y. Ma. 2002. Two new species of Aulacidae from Zhejiang Province, China (Hymenoptera). *Acta Zootaxonomica Sinica* 27: 149–152.
- Jennings, J. T., A. D. Austin, and N. B. Stevens. 2004a. Species of the wasp genus *Aulacus* Jurine (Hymenoptera: Aulacidae) endemic to South Australia. *Transactions of the Royal Society of South Australia* 128: 13–21.
- . 2004b. The aulacid wasp fauna of Western Australia with descriptions of six new species. *Records of the Western Australian Museum* 22: 115–128.
- . 2004c. First record of Aulacidae (Hymenoptera: Evanioidea) from New Caledonia with descriptions of three new species of *Aulacus* Jurine. *Journal of Australian Entomology* 43: 346–352.
- Konishi, K. 1990. A revision of the Aulacidae of Japan (Hymenoptera, Evanioidea). *Japanese Journal of Entomology* 58: 637–655.
- Smith, D. R. 2001. World catalog of the family Aulacidae (Hymenoptera). *Contributions on Entomology, International* 4(3): 263–319.
- . 2005a. Review of the Aulacidae (Hymenoptera) of Chile and adjacent Argentina. *Proceedings of the Entomological Society of Washington* 107(4): 820–834.
- . 2005b. Aulacidae (Hymenoptera) of northern South America, emphasizing Colombia. *Transactions of the American Entomological Society* 131: 217–253.
- Turrisi, G. F. 2005. Description of *Aulacus schoenitzeri* spec. nov. (Hymenoptera, Evanioidea, Aulacidae) from China. *Linzer Biologische Beiträge* 37(1): 797–803.